Remarks/Arguments

The Office Action mailed May 3, 2007 has been reviewed and carefully considered.

Claim 6 has been amended. Claims 1-12 remain pending in this application.

Reconsideration of the above-identified application in view of the following remarks is respectfully requested.

Claims 1-6 and 8-11 stand rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Published Patent Application No. 2003/0013452 A1 to Hunt et al. (hereinafter "Hunt") in view of U.S. Published Patent Application No. 2003/0003917 A1 to Copley (hereinafter "Copley"). Claim 7 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hunt in view of Copley and further in view of U.S. Patent No. 6,058,302 to Westerberg (hereinafter "Westerberg"). Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over Hunt in view of Copley, in view of Westerberg and further in view of U.S. Patent No. 6,959,048 to Horneman et al. (hereinafter "Horneman").

It is respectfully asserted herein that Claim 1, and all of the claims that depend there from, are patentable and non-obvious over the cited references for at least two reasons as set forth herein. First, it is respectfully asserted that none of the cited references, either taken singly or in combination, teach or suggest all of the recited limitations of Claim 1. Second, it is respectfully asserted that even assuming *arguendo* that all of the recited limitations are taught, the rejection must be withdrawn because the invention recited in Claim 1 would change the principle of operation of Hunt, which is a prohibition against a reference being used against a pending claim as provided in MPEP §2143.01.

Regarding the first assertion above, it is respectfully asserted that none of the cited references teach or suggest "communicating signaling information directly between one micro cell and the one macro cell via a third wireless channel in response to access of the micro cell by the mobile communications device", as recited in Claim 1.

In fact, the Examiner has even admitted that "Hunt ... fails to explicitly disclose that the micro cell and the one macro cell are directly communicating" (Office Action, p. 4).

However, the Examiner has asserted that paragraph [0025] of Copley discloses the preceding recited limitations of Claim 1. The Applicant respectfully disagrees.

Rather, paragraph [0025] of Copley simply discloses that "[t] he base interface station 118 is connected to a cellular base station 102 that is part of a conventional GSM cellular system to form a base station 120" (emphasis added)."

For completeness, the entire text of paragraph [0025] of Copley is reproduced as follows:

> In the exemplary embodiment, a base interface station 118 is connected to each cellular base station 102 of a cellular communication system. The base interface station 118 is connected to a cellular base station 102 that is part of a conventional GSM cellular system to form a base station 120. The cellular base station 102 is shown as a block having a dashed line to illustrate that the base station 120 may be single integrated unit. Therefore, the cellular base station 102 may be a separate device from the base interface station 118 or the base station 120 may be a single integrated unit having the functionality of the base interface station 118 and the cellular base station 120 as described herein. The cellular base station 102 is likely to be separate from the base interface station 118 where a simulcast communication system with interface stations 112, 122 is integrated with an existing cellular infrastructure and the base interface station 118 is connected to an existing cellular base station 102. Those skilled in the art, however, will recognize the various suitable configurations of the base interface station 118 and the cellular base station 102 and implementations of the base stations (102, 118, 120) in accordance with the teachings herein. For example, the functionality of the base interface station 118 can be implemented in a cellular base station 102 by modifying a conventional cellular base station or manufacturing an integrated base station that functions as both a cellular base

> station 102 and a base interface station 118. Further, the base interface station 118 and the cellular base station 102 can be co-located or can be in different locations. In the exemplary embodiment, the base interface station 118 is connected to the cellular base station 102 through a coaxial cable. Communication and control signals, however, can be transmitted between the two units (02, 118) using a cable, radio frequency link, microwave link or any other type of wired or wireless communication channel.

The Examiner has stated "Copley discloses that the micro cell and the one macro cell are directly communicating (paragraph 25, read as the base interface station 118 is connected to the cellular base station 102 through a coaxial cable. Communications and control signals, however, can be transmitted between the two units (102, 118) using a cable, radio frequency link, microwave link or any other type of wired or wireless communication channel)" (Office Action, p. 4).

However, it is respectfully asserted that neither the macro cell nor the micro cell recited in Claim 1 correspond to any of the base interface station 118, the cellular base station 102, or the base station 120 (formed from 118 and 102). For example, the phrases "macro cell" and "micro cell" do not even appear once in paragraph [0025].

Moreover, while the base interface station 1180 and the cellular base station 102 that are connected to form base station 120 may be implemented separately WITHIN the base station 120 or may be combined into a single integrated unit, the bottom line is that the base interface station 118 and the cellular base station 102 are nonetheless connected TO FORM A BASE STATION 120. In contrast, the macro cell and the micro cell recited in Claim 1 are not base stations, and are not disclosed as being connected to form a unified base station as disclosed in Copley.

Further, while Claim 1 recites that the signaling information is communicated directly between one micro cell and the one macro cell via a third wireless channel in response to access

of the micro cell by the mobile communications device, no such disclosure exists in paragraph [0025] of Copley regarding the emphasized preceding portion of Claim 1 (nor in Hunt as argued in detail below).

"To establish prima facie obviousness of a claimed invention, all the claim limitations must be taught or suggested by the prior art" (MPEP §2143.03, citing *In re Royka*, 490 F.2d 981, 180 USPQ 580 (CCPA 1974)). Accordingly, independent Claim 1 is patentably distinct and non-obvious over the cited references for at least the reasons set forth above.

"If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious" (MPEP §2143.03, citing *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988)).

Regarding the second assertion, it is further respectfully asserted that Copley does not cure the deficiencies of Hunt, and that a combination of Hunt and Copley is improper in the first place, as such combination would change the principle of operation of Hunt (the reference being modified as per the Examiner's reasoning set forth on page 4 of the Office Action), which is prohibited by, for example, MPEP §2143.01. The following is premised on the Examiner's reading of Copley, where the base interface station 119 and the cellular base station 102 are equated to the micro cell and the macro cell, as set forth on page 4 of the Office Action.

The following text of MPEP §2143.01 is provided:

> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims *prima facie* obvious. *In re Ratti*, 270 F.2d 810, 123 USPQ 349 (CCPA 1959) (Claims were directed to an oil seal comprising a bore engaging portion with outwardly biased

resilient spring fingers inserted in a resilient sealing member. The primary reference relied upon in a rejection based on a combination of references disclosed an oil seal wherein the bore engaging portion was reinforced by a cylindrical sheet metal casing. Patentee taught the device required rigidity for operation, whereas the claimed invention required resiliency. The court reversed the rejection holding the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Here, the principle of operation of Hunt is passing control data over a control sub-channel 212 between a terminal 110 and a BS 104 controlling a macro cell 102. In contrast, the principle of operation of Copley is communicating control signals between a cellular base station 102 and a base interface station 118. Thus, using the approach of Copley in the invention of Hunt would change the principle of operation of Hunt, by, at the least, using different elements to pass such control data (Hunt involves a terminal 110 and a base station 104 while Copley involves a cellular base station and a base interface station). In fact, the approach of Copley teaches away from the approach disclosed in Hunt.

Further regarding the second assertion, Hunt discloses a cellular radio communications system with an umbrella macro cell 104 having a plurality of pico cells 108. The pico cells of Hunt are disclosed to have a smaller coverage area, forcing fewer users per pico cell, allowing for greater bandwidth per user in the pico cell. In contrast to the present principles, Hunt does not disclose sending signaling information directly from the macro cell to the pico cell upon user connection to the pico cell. Instead, Hunt provides connection information from the macro cell

to the mobile terminal. Specifically, "[t]he macro cell 102 offers best support for the control data, as it has sufficient capacity to support the traffic, and covers a wide area so a continuous link can be maintained" and "[b]ecause the control sub-channel 212 is set up with the macro cells BS [base station] 104, this is able to manage the selection of the most appropriate pico cell 106 for use in user data transfer at any one time." (Hunt, para. 0024). This disclosure indicates that the macro cell handles transmission of control data from the macro cell to the *mobile terminal*, instead of the micro cell as recited in claim 1.

The applicant respectfully traverses the Examiner's interpretation of the teachings of Hunt. Regarding claim 1 of the present principles, the Examiner has stated that "[t]he pico cell 102 is capable of voice telephony and data communications with a Mobile station 110 (figure 2) using a sub-channel 212 (figure 2)" (Office Action, p. 3). The applicant respectfully draws the Examiner's attention to paragraph [0023] of Hunt, which states that "control data is passed over a control sub-channel 214 between a terminal 110 and a BS 104 controlling a ***macro cell 102***." This is contrary the Examiner's assertion that the pico cell of Hunt receives control information from the Macro cell. Since the control information is passing from the macro cell directly to the mobile terminal, the pico cell has no access to the control information. Therefore, Hunt cannot anticipate, or even suggest "communicating signaling information *directly* between one micro cell and the one macro cell via a third wireless channel" a recited in claim 1, and a modification of Hunt using the teachings of Copley (as interpreted and set fort by the Examiner in the Office Action) would result in a change of the principle of operation of Hunt, which is prohibited under MPEP §2143.01.

Further, the Examiner has stated that "there is a communications channel between the secondary station and a primary station, which comprises control and data sub-channels for the

respective transmission of control information and user data" and that "[t]he macro cell BS 104 has direct links (i.e. third wireless channel) to the pico cell base stations 108 included within the umbrella macro cell 102, and routes data to and from whichever is appropriate for current communications in a manner which is transparent to the network" (Office Action, p. 3). However, the data routed to the pico cell, as taught by Hunt, is the data requested by the user, and is not signaling information as recited in claim 1. Specifically, paragraph [0029] of Hunt further teaches that "[w]hen there is a data packet to be transmitted to the user, the macro cell 102 routes the data to the identified pico cell 106, and sends the notification to the MS 1120, via the control sub-channel 212 between the macro cell and the MS 110, that it should receive a data packet using the particular data sub channel 214 allocated for use by the pico cell 106."

This passage from paragraph 0029 of Hunt further indicates that the macro cell determines which pico cell the mobile terminal should down load from, and then instructs the *mobile terminal* regarding which pico cell to access to download. Therefore, any communication of control information would necessarily happen *prior* to the mobile terminal accessing the pico cell. Furthermore, while the mobile terminal in Hunt may be able to determine the signal strength of a pico cell, or determine when the mobile terminal has moved into an area serviced by the pico cell, according to paragraph 0029 of Hunt, the mobile terminal will not be able to access the pico cell until the macro cell transmits instructions to the mobile terminal to being a download from a particular pico cell. Therefore, the communications of the signaling information of Hunt cannot be "in response to access of the micro cell by the mobile communications device" as recited in claim 1.

Thus, the principle of operation of Hunt involves communicating control information *prior* to the mobile terminal accessing the pico cell (and not in response thereto as per Claim 1),

and a modification of Hunt using Copley would modify the principle of operation of Hunt, which is prohibited under MPEP §2143.01.

Accordingly, the combination of Hunt and Copley is nonetheless improper in the first place and should be withdrawn as such.

Independent claim 6 recites a system analogous to the method of independent claim 1, and recites, *inter alia*, "a third wireless channel for *directly* communicating signaling information between the one micro cell and the one macro cell *in response to access of the micro cell by the mobile communications device* to enable the controller to also control the operation of the macro cell." The applicant respectfully asserts that the preceding limitations are also not disclosed by either Hunt and/or Copley, either taken singly or in combination, and that Claim 6 is patentably distinct over the cited references for at least the same reasons as set forth above with respect to independent claim 1.

Claims 2-5 depend from Claim 1 and, thus, includes all the elements of Claim 1. Claims 7-12 depend from Claim 6 or a claim which itself is dependent from Claim 6 and, thus, includes all the elements of Claim 6. Accordingly, Claims 2-5 and 7-12 are patentably distinct and non-obvious over the cited reference for at least the reasons set forth above with respect to Claims 1 and 6, respectively.

In view of the foregoing, Applicant respectfully requests that the rejections of the claims set forth in the Office Action of May 3, 2007 be withdrawn, that pending claims 1-12 be allowed, and that the case proceed to early issuance of Letters Patent in due course.

Serial No: 10/563,385
Customer # 24498
July 20, 2007

PU030023

It is believed that no additional fees or charges are currently due. However, in the event that any additional fees or charges are required at this time in connection with the application, they may be charged to applicant's representatives Deposit Account No. 07-0832.

Respectfully submitted,

Jun Li, et al.

Date: 7/20/07

Attorney for Applicant,
Robert B. Levy
Reg. No.28, 234
609-734-6820

Mailing Address:

Thomson Licensing LLC
Patent Operations
P.O. Box 5312
Princeton, NJ 08543-5312